Contact
mailed
Erin

PLANTS OF ALASKA

Big Delta River

September 25, 1940

L. J. Palmer, No.

Cinchona Project

Brunelliaceae determined by Dr. José Cuatrecasas

F.R. Fosberg

No. 21155 Brunellia tomentosa H. & B.

22783 Brunellia ovalifolia H. & B.

M.L. Grant

No. 9556 Brunellia colombiana Cuatr.

E.L. Little

No. u 7253 Brunellia sibundoya Cuatr.

7283 Brunellia comocladifolia H. & B.

u 9024 Brunellia sibundoya Cuatr.

Compositae determined by Dr. José Cuatrecasas

E.L. Core

No. u 3 Espeletia grandiflora H. & B.

u 25 Senecio abietinus Willd.

u 43 Diplostephium phylicoides (HBK) Wedd.

u 57 Senecio trichopus (Benth.) Green.

220a Espeletia Hartwegiana Cuatr.

222 Senecio vaccinioides (HBK) Sch.Bip.

380 Espeletia occidentalis A.C. Smith, fma.

391 Senecio vaccinioides (HBK) Sch.Bip.

u 392 Espeletia occidentalis A.C.S., fma.

u 395 " " "

u 396 " " "

~~406~~ " " "

454 " "

u 544 " "

u 577 Senecio Garcibarriagae Cuatr.

976 Espeletia Hartwegiana Cuatr.

980 Senecio vaccinioides (HBK) Sch.Bip.

Drew

No. 993 Senecio nubigenus HBK. v. pimpinellifolius (HBK) Cuatr.

u 75 ✓ Senecio nubigenus HBK.

u 81a ✓ Senecio nubigenus HBK.

u 306 ✓ Werneria disticha HBK.

u 445 ✓ Senecio nivalis (HBK) Cuatr.

453 Senecio involucratus DC.

463 Senecio teretifolius DC

485 Espeletia Hartwegiana Cuatr.

u 90 ✓ Erigeron pellitus Wedd

J.E. Ewan

No. 15649 Espeletia pleiochasia Cuatr.

15986- Senecio andicola Turcz.

15990 Senecio popayanensis Hier.

15999 Diplostephium glandulosum Hier.

16009 Senecio sibundoyensis var. tomentosus Cuatr.

16094 Espeletia Hartwegiana Cuatr.

16097 Senecio superandinus Cuatr.

16099 Senecio canescens (HBK) Cuatr.

16135 Senecio canescens (HBK) Cuatr.

16287 Gynoxys sancti-antonii Cuatr.

16288 Espeletia Hartwegiana Cuatr.

16303 Espeletia Hartwegiana Cuatr.

16325 Espeletia Hartwegiana Cuatr.

16398 Werneria disticha HBK

u 16403 ✓ Senecio nivalis (HBK) Cuatr.

16405 Senecio superandinus Cuatr.

16411 Diplostephium rupestre (HBK) Weddell

16427 Senecio summus Cuatr. var. longifolius Cuatr.

16429 Senecio arbutifolius HBK

16431 Gynoxys baccharoides (HBK) Cass.

16432 Senecio repens DC.

No. 16442 Diplostephium rupestre (HBK) Wedd.

16444 Senecio ericaefolius Benth.

16445 Senecio superandinus Cuatr.

16449 Senecio nubigenus HBK

16460 Senecio involucratus DC.

16539 Espeletia Hartwegiana Cuatr.

u 16629✓ Senecio popayanensis Hier.

16902 Diplostephium phylicoides (HBK) Wedd.

16908 Espeletia corymbosa H. & B. mixed with E. grandiflora

16910 Espeletia grandiflora H. & B.

F.R. Fosberg

No. 19115 Gongylolepis colombiana Cuatr.

19179 Senecio aciculatus Cuatr.

19206 Gynoxys ilicifolia (L.f.) Wedd.

19216 Diplostephium phylicoides (HBK) Wedd.

19667 Espeletia corymbosa H. & B.

20203 Diplostephium rosmarinifolium (Benth.) Wedd.

20210 Espeletia grandiflora H. & B.

u 20213✓ Diplostephium phylicoides (HBK) Wedd.

20253 Senecio ledifolius (HBK) DC.

20263 Senecio pulchellus (HBK) DC.

20578 Diplostephium rosmarinifolium (Benth.) Wedd.

20597 Diplostephium denticulatum Blake

20674 Senecio canescens var. boyancensis Cuatr.

20795 Espeletia phaneractis(Blake) A.C.Smith

20826 Senecio abietinus Willd.

21351 Espeletia corymbosa H. & B.

u 21363✓ Mutisia clematis L.f.

21364 Senecio formosus HBK

No. 21460 Senecio formosus HBK

u 21699 Senecio nitidus (HBK) DC.

21709 Senecio pulchellus (HBK) DC.

21879 Senecio microchaete (Benth.) DC.

21903 Espeletia pleiochasia Cuatr.

22018a Senecio microchaete (Benth.) DC.

22266 Senecio pulchellus (HBK) DC.

22294 Mutisia clematis L.f. var.

22325 Diplostephium rosmarinifolium (Benth.) Wedd.

22345 Senecio formosoides Cuatr.

22368 Senecio andicola Turcz.

22561 Senecio teretifolius DC.

22624 Senecio sonchoides HBK.

22632 Werneria disticha HBK.

22650 Gynoxys miniphylla Cuatr.

M.L. Grant

No. 9229 Diplostephium phylicoides (HBK) Wedd.

9243 Senecio pulchellus (HBK) DC.

9244 Senecio abietinus Willd.

9414 Espeletia grandiflora H. & B.

9423 Diplostephium phylicoides (HBK) Wedd.

9483 Espeletia phaneractis (Blake) A.C.Sm.

9484 Espeletia corymbosa H. & B.

9485 Espeletia grandiflora H. & B.

9526 Senecio Garcibarrigae Cuatr.

10632 Espeletia Hartwegiana Cuatr.

u 10644 ✓ Senecio formosoides Cuatr.

u 10863 ✓ Diplostephium rosmarinifolium (Benth.) Wedd.

u 10872 ✓ Senecio polymerus Klatt

u 10962 ✓ Senecio polymerus Klatt

H. St. John

No.	20535	Senecio microchaete (Benth.) DC.
	20605	Senecio ramentosus Cuatr.
	20675	Senecio microchaete (Benth.) DC.
	20736	Senecio semidentatus Klatt
	20741	Diplostephium revolutum Blake
	20746	Senecio pseudoformosus Cuatr.
	20751	Senecio andicola Turcz.
	20753	Senecio vaccinioides (HBK) Sch.Bip.
	20767	Espeletia santanderensis A.C. Smith
	20779	Espeletia conglomerata A.C. Smith
	20798	Senecio niveo-aureus Cuatr.
	20799	Diplostephium glutinosum Blake
	20895	Gynoxys induta Cuatr.
	20896	Gynoxys Lindenii Sch. Bip. fma.
	20898	Espeletia Hartwegiana Cuatr.

Leave 3" margin on left

ITINERARY OF F. R. FOSBERG, 1942-1945

The following itinerary is a day by day skeleton account of my travels in connection with the U. S. Government Cinchona program in Latin America during the years 1942 to 1945. Inclusive collection numbers are given with each locality. However, this itinerary should not be used to obtain label data, as more complete data, localizing each point and giving the distance from the place mentioned is being supplied for the labels for each number.

Itinerary--F. R. Fosberg

Left Washington Oct. 26, 1942, for Colombia via Guatemala. Left Colombia finally Dec. 21, 1944 arriving in Ecuador the same day. Spent Dec. 29 to Jan. 3 in Peru, returning to Ecuador Jan. 3. Left Ecuador finally March 8, 1945 for Washington via Guatemala, arriving in Washington March 12, 1945. Collected during this period specimens numbered 19037 to 23240.

Detailed Itinerary:

Oct. 26 - Left Washington, flew via Mexico, arrived Guatemala City.

~~Guatemala--1942~~

Oct. 27-31 in and around Guatemala City.

28 Antigua and vicinity (#

Finca Felicidad (#19037)

Finca La Capitia, 10 km. w. of Antigua (#19038)

Finca Jauja

These fincas are all coffee plantations. All have a few trees of C. pubescens var. succirubra (#19037) persisting from former plantings.

29 Finca Las Charcas, just outside Guatemala City. The proprietors of this finca, Sr. and Sra. Rafael Piñol, have experimental plantings of various new crops such as Eucalyptus, Camphor, and other essential oil plants, and Cinchona. They have several acres of young Cinchona trees and a small nursery of still younger plants. The plantation is on gently sloping fine friable soil, the Cinchona growing in full sun. All plants, even nursery stock 3-4 dm. tall, is flowering freely, probably in response to the full sun. The plants are a heterogeneous mess of hybrids of unrecorded parentage, probably ♂ Ledger X Succirubra.

30 Barranca just north of the city. (#19039-19061). This barranca is

one of a series of steep-walled ravines several hundred feet deep cut in the level ash-beds, probably an old lake bed, around Guatemala City. The remnants between them are flat topped mesas, often meadow-land, with oaks around the edges. Many of the walls were truly precipitous. Maize was planted on steep talus slopes, some of which could not have been more than 10-15° from the vertical. A native told us that three crops were produced in a year.

Oct. 31 Left Guatemala; went via Tegucigalpa, Honduras; San Salvador, El Salvador (#19062); Managua, Nicaragua; San Jose, Costa Rica; David, Panama; to Panama City, Panama.

Nov. 1 Left Panama; went via Medellin, Colombia, to Bogotá, Colombia. The hills around Medellin are rather completely cleared and badly eroded.

Nov. 2-8 Bogotá and vicinity.

8 Monserrate, one of the mountaintops directly back of Bogotá (#19063-19084). Our first experience with "páramo", or rather, "subpáramo", vegetation -- Low brush with many ericads, melastomes, and composites as conspicuous components.

Nov. 9 Left Bogotá on trip to Chitagá and vicinity, via

9. Tunja and Paipa, Boyacá.

Nov. 10 Duitama, Belén and Soata, Boyacá; Río Chicamocha, Capitanejo, Malaga, Santander; Chitagá, Norte de Santander.

The paramos of Consuelo, between Belen and Soatá and that of Almorzadero, between Malaga and Chitagá, are magnificent. At 3300 m. and up beautiful stands of Espelletia dominate the landscape which is otherwise fundamentally a grassland. The Canyon of the Río Chicamocha is arid, with sparse brush, columnar cacti, these with epiphytic Tillandsia, apparently wild Schinus molle and Thevetia peruviana, scattered here and

there on the slopes. It is hard to be sure as to whether these are native in this area or merely escapes from cultivation.

Practically this whole day's trip has been made through sadly denuded and eroded areas. Few patches of forest of any kind other than weedy thickets were to be seen.

(#19085-19086)

Nov. 11 To Bata and returned to Chitagá.

12 To Bata.

13 Started for Chucarima, up the Río Valegra.

14-15 Chucarima ~~xxxxxxxxxxxx~~ (#19087-19135).

This area has considerable forest remaining, though they are clearing it as fast as they can. It is of a wet, montane rain-forest type. Cinchona pubescens (19102, 19134) is scattered throughout the region at from 1500 to 2000 m. Above this is a form of C. officinalis (19121) called locally, "quina blanca". A form of what apparently is Ladenbergia ~~macrocarpa~~ undata (19116, 19119, 19135), called here "quinón", is very common.

Nov. 16 Returned to Bata ~~xxxChitagáx~~ (#19136-19139) and Chitagá.

17 To Samaria, about 10 km. up the Río Chitaga from Chitaga' (#19152)

Cordillera de Hoya Grande, and the Río Valegrá at Quebrada Quemada.

18 Explored up the Río Valegra (#19140-19151). This river drainage has been largely cleared but there are considerable patches of forest left here and there which contain Cinchona pubescens (19148, 19149) rather commonly and Cinchona officinalis (19150, 19153) more ~~rarxrx~~ rarely.

Nov. 19 Returned to Chitagá via Bosque de Aguadas (#19153-19157), Cordillera de Hoya Grande (#19158-19168), and Quebrada Samaria (#19169-19201).

Nov. 20 Chitagá to Tunja.

Nov. 21 Tunja to Bogotá.

Nov. 21-30 Bogotá (19202-19220) (collected at Vitelma, just above south end of city)

30 Left Bogotá for Neiva, Huila.

Dec. 1-2 Neiva (#19221)

Dec. 3 La Junta, 6 km. w. of Algeciras (19222-19234)

Algeciras (#19235-19250)

Dec. 4 Algeciras to Finca Virginia, Rio Neiva Valley.

Dec. 5 Finca Virginia (#19251-19259) (collected at Finca Altagracias, just above Finca Virginia)
Río Neiva Valley, above Finca Virginia (#19260).

Finca Altagracias is said to be an old Cinchona plantation. It is now a patch of decadent, Chusquea-filled woods, with many diseased trees of the common Huila form of Cinchona officinalis (19253, 19256, 19258, 19259) (cambium attacked by fungus), with sprouts of an unidentified hairy Cinchona, and with abundant Cinchona pubescens (19251) in the wooded ravines at a slightly lower altitude.

Finca Virginia to Finca Las Mercedes, at headwaters of Río Balsillas.

Dec. 6 Finca Las Mercedes (#19261-19275)

Ridge between Cerro del Diablo and Cerro Neiva is densely forested with thick wet cloud forest, with scattered trees of Cinchona officinalis, and at least two forms of Ladenbergia. There is some question whether this finca and those on down the Río Balsillas are in Meta or in Caquetá, in other words, whether the Río Balsillas is in the Orinoco or Amazon drainage. Most maps show it to be in Meta, but the owners (and F. O. Martin, Geog. Rev. 19: 621-627, 1929) say it is in Caquetá. (19274, 19275)

Dec. 7 Finca Las Mercedes to Finca Tama (#19276), Finca Balsillas (#19277-19285), and Finca Abysinia, all in Valley of Río Balsillas.

Dec. 8 Finca Abysinia (#19286-19292). (19284, 19292)

The sides of this valley are covered with thick wet cloud forest, with abundant Cinchona pubescens on and near the valley floor, and Cinchona officinalis (found here later by Valencia) up on the ridges.

Dec. 9 Finca Abysinia to Finca Playón (19293-19294) and Finca Las Mercedes.

Dec. 10 Finca Las Mercedes through valley of Río Neiva, Batan (#19295-19298), Salado, (19299-19304) to Algeciras.

Dec. 11 Trip from Algeciras up Quebrada Perdiz almost to summit of Cordillera and return (#19305-19312).
Algeciras to La Junta and Neiva.

Dec. 12-15 Neiva.

Dec. 15 ~~Neiva to Algeciras~~
Left Neiva for Colombia, up Río Cabrera Valley.
Soil in many places badly eroded. Cacao plantations along vegas of Río Cabrera and Río Ambicá.

Dec. 15-16 About Colombia (19313-19352).

fl/ Dec. 16 Left Colombia for Uribe, over the old ≠ Comapnia Herrera-Uribe trail, a relic of the Cinchona boom of the late nineteenth century, a trail that had been paved with cobblestones but which has deteriorated very badly from lack of care. It extends from Colombia up the Río Ambicá almost to its source, over the Paso de las Cruces (one of several passes of this name), down to the Río Tigre, Río Papamene, (19353-19371) and across a wet plateau to Uribe. Went as far as ≠ Finca El Playón, south on the side of the Río ~~Blanco~~ Ambicá above the confluenceof the Río Blanco. (19371) Here was found Cosmibuena grandiflora for the first time.

fl/ Dec. 17 Left El Playón up Río Ambicá across Quebrada Honduras (19372-19375); where we first encountered Ladenbergia magnifolia (19376), Quebrada La Cueva (19377-19382) where Cinchona pubescens (19377) and Schizocalyx bracteosus (19378) were found, as well as Isertia hypoleuca (?) (19379) which was ≠ mistaken for a Ladenbergia; Finca San Pedro and Quebrada San Pedro (19383), the last inhabited place on the west slope of the Cordillera; Quebrada Trinidad (19384-19389) where we first encountered Joosia umbellifera (19384); over the crest of the Cordillera at ~~El~~ El Paso de Las Cruces (El Rusio) (19390); to Buenavista ~~(19391-19395)~~ where large trees of Ladenbergia bogotensis (19393) were found. Buenavista is merely a clearing in ≠ the wet forest on the eastern slope of the Cordillera above the Río Tigre. There are no buildings, but grass is available for the animals.

fl/ Dec. 18 Left Buenavista (19391-19395), went through the valley of the Río Tigre past the house called "Cartagena" (10396-19409) near which we first found Condaminea corymbosa (19409) (here a large tree)≠, and where the trail was so bad that the loads had to be taken from the mules and carried on the backs of the peones across the narrow places; across the separating ridge (19410-19411) to the Río Papamene which was crossed with some difficulty; to Casa Papamene (19412), an old ~~station~~ Cia. Herrera-Uribe station on the trail. In this region Ladenbergia ~~and~~ magnifolia (19311)

(19524)

and Remijia pedunculata are encountered occasionally in the thick wet forest that covers the ~~xxxxxxxx~~ slopes in the entire region, but no Cinchona was seen.

fl) Dec. 19 Left Casa Papamene and crossed the broad swampy floor of the Río Papamene valley through the most luxuriant and spectacular jungle of the sort seen in illustrations of travel books that I have ever seen. Crossed the wet plateau of Las Lagartijas (19413-19422), stopping briefly at the clearing called Chambuscado, where we had lunch under an unwalled thatched shelter where we fed the single inhabitant some of our canned meat, his first food other than bananas and plantains in months; crossed the Río Duda and arrived at Uribe, a village on the edge of the eastern lowlands, within sight of the almost unknown Cordillera Macarena.

This village was founded by and was headquarters for the exploitations of Rubber and Cinchona bark by the Compania Herrera-Uribe. Remijia pedunculata (19456, 19496, 19497) and Ladenbergia ~~macrocarpa~~ magnifolia (19461) are common here in the rather open forests on the slopes above the village.

fl) Dec. 19-22 Uribe (19423-19493). Holdridge left us here to ride to Villavicencio via San Martín. We spent much time trying to get information on where the Cinchona exploitations of the last century ~~xxxxxxxxxxxxxxxxxx~~ took place. None of the quineros were still alive. An old man who took part in the rubber gathering for the company gave us some vague information about localities called El Oso and El Pato which seemed to several days ride away, but nothing definite.

fl) Dec. 22 Left for Colombia. Crossed the plateau of Las Lagartijas (19494-19512) where Remijia pedunculata (19505) and Joosia umbellifera (19507) were observed to be common in places. Arrived in the valley of Río Papamene (19513-19527) and stopped for the night at a dirty little shack east of Casa Papamene.

fl) Dec. 23 Crossed to valley of Río Tigre, via Quebrada Diluvio (19528-19529),

"Cartagena" (19530-19537), to Buenavista (19538-19539).

Dec. 24 Left Buenavista on trail (19540-19555) to Paso de las Cruces (19556-19562), Quebrada la Trinidad (19563-19567), Quebrada San Pedro (19568), to a ranch in the valley of the Río Blanco.

Dec. 25 Went to Finca Antillas, up the Río Blanco (19569-19579), where were abundant stands of a very good quality of Cinchona officinalis. This was said to have been planted in the 1880's, and may have been the La Estrella plantation mentioned in

Returned to Colombia. Silcocks had arrived earlier, and had seen no Cinchona.

Dec. 25-27 Colombia (19580-19614). This region is so overgrazed that it will scarcely support any stock.

Dec. 27 Left Colombia and went to Galilea, on Quebrada Ariari.

Dec. 27-29 Galilea (19615-19651). Large trees of Cinchona pubescens are abundant here on lower slopes and on the vegas of the Quebrada Ariari, Ladenbergia macrocarpa on the slopes, while Cinchona officinalis is very rare on the higher ridges, but of an excellent quality. No large trees of this were seen. This valley is clothed in magnificent montane rain forest but is rapidly being cleared, even on the steepest slopes.

Dec. 29 Left Galilea and returned via Quebrada San Blas, at El Valle (19652-19662) and Quebrada del Chilcal (19663-19666), to Colombia.

Dec. 30 Left Colombia and arrived in Neiva.

Dec. 31 Left Neiva and went by "autoferro" on the railroad to Bogotá.

Jan. 1-14, 1943 in and around Bogotá.

6 Vitelma, San Cristobal, near Bogotá (19667-19685)

10 Quebrada El Obispo, above Bogotá (19686-19709)

14 Went to Neiva.

14-16 Neiva

16 Went to San Antonio Fortalacillas (19710-19721)

17 Went to Vega Larga and Finca El Cedral (19722-19738, 19759-19766), up the valley of Río Fortelacillas. This country is almost completely denuded, some of it in coffee, much in pasture.

18 Went up the valley of Río Fortelacillas (19767-19780) to Finca Yucales (19739-19758). (19739, 19741, 19754, 19758) Cinchona pubescens is fairly common here in the patches of wet mossy forest left on the steep sides of the valley.

19 Went up the head of the valley to Paso de Las Cruces (2531 m. alt.) (19781-19783) and back to Yucales. Spent a little time searching the ~~xxxxxxxxxxxxxxxx~~ slopes below the pass (19784-19802) for Cinchona officinalis but were able to find none in the time available. (19797) C. pubescens is fairly common for several hundred meters above Yucales. A couple of Ladenbergias are also found on these (19796, 19802) thickly wooded slopes. The area above Yucales is thick, undisturbed montane rain- or cloud-forest, growing on steep slopes.

20 Returned down the valley to Vega Larga, ~~xxxxx~~ (19803-19805) Palacio (19806-19814), to ~~Fortelacillasx~~ San Antonio Fortelacillas (19815-19822), and to Neiva. Along the trail above Vega Larga was a scattering of Cosmibuena sp. (19803)

20-23 Neiva (19823-19824)

22 Collected a large quantity of plants of Momordica charantia (19823) to be dried and sent to U. S. to be investigated as a source of antimalarials.

23 Returned to San Antonio Fortelacillas.

24 Went to Vega Larga and back through Palacio, where I collected sprouts of Ladenbergia magnifolia (19825) to San Antonio.

25 Left San Antonio (19826-19836), walked ~~to~~ the Río Las Ceibas (19837-19843) to Platanillal, through cutover, burned-off, overgrazed, sterile brushy country, with a scattering of Ladenbergia Magnifolia trees (19835), and back to Neiva.

26 Went to Gigante via Hobó (19844-19848).

27 Went up Quebrada Cuandinosa (19849) ~~au~~ the ridge between Quebrada Aguablanca and Q. Chonta (19850-19851) and up to Finca Miravalles (19852-19853).

28 Went up to the ridge above the finca, the divide between the drainages of the Río Blanco and Quebrada Cuandinosa (19854-19877) which is still ~~xxx~~ largely covered by thick wet forest with manchas of Cinchona officinalis (19854, 19860), ~~xxx~~ Ladenbergia sp. (19857) and an isolated tree of a peculiar variety of Cinchona pubescens with recurved short stipules, (19875), here growing at comparable altitudes with Cinchona officinalis, spoiling the nice idea that I had been forming that the latter always grows at a higher alt. than the former. There are substantial quantities of C. officinalis on these slopes and they seem typical of what we can see ~~xxxxxx~~ for many miles in both directions at these altitudes. Returned to Miravalles, and down the ridge between the Quebradas Chonta and Aguablanca (19878-19881) which had a scattering of the ordinary form of C. pubescens (19878) with erect stipules and a substantial amount of Ladenbergia magnifolia (19881). These slopes are completely denuded excepting for scraps of second-growth. Returned to Gigante.

29 Went to Garzón.

30 Went up ridge south of Quebrada Cascajosa (19882-19883) to Finca los Cedros (19884-19890). Cinchona pubescens sprouts and small trees are common here in fence rows and patches of secondgrowth woods. This area has been completely cut over.

31 Went on up the ridge ~~(19884-~~ (19891-19894) to Finca la Estrella (19895) and on up the ridge almost to the summit (19896-19910) and back to the finca. Ladenbergia sp. was found on the ridge below the finca, and sprouts of Cinchona officinalis in a clearing above the finca, but time was not available to search further for it.

Feb. 1 Returned, via Quebrada Cucaracha (19911-19927) where there was some C. pubescens (19924), and the ridge south of Q. Cascajosa (19928-19934), noting considerable C. pubescens (19930), Ladenbergia magnifolia (19932), and, just above Garzón, a tree of Cosmibuena (19934), to Garzón.

2 Garzón.

3 Went to Pitalito.

4 Went up the Río Guarapas to Palestina.

5 Started up the ridge east of Quebradona to a point a few little below the summit.

6 Went on up the the summit ~~(19952-~~ (19935-19958). This whole area is covered with dense wet forest, in which were scattered small saplings of Cinchona officinalis (19936) but no large trees were seen. Ladenbergia sp. (19958) is found on the ridge. Cinchona officinalis is said to have been harvested here in small quantities for a long time, and to be, consequently more or less inaccessible. On the ridge below (19959-19990)

which is thickly forested, Cinchona henleana (19965) is common but no large trees were seen. Ladenbergia sp. (19978) is also common and grows to considerable size. Returned to same camp.

7 Returned via Quebradona (19991-20012) to Palestina ~~(19~~ (20013-20015).

Hevia

8 left Palestina along Quebradona (20016-20017) observing Cinchona pubescens (20016) occasionally in the second-growth, and along Río Guarapas (20018-20028) where there was some Ladenbergia magnifolia (20021), to Pitalito. This area has been cleared, overgrazed and is covered in many parts by a brushy second-growth.

9 Pitalito (20029-20050).

10 Went to San ~~Augustin~~ Agustín, then out to Las Mesitas (~~2005~~1-20052) where the stone idols have been excavated, and back to San Agustin.

11 Went south to a ridge called Lavaderos (20053-20071) where there were great quantities of a peculiar form of Cinchona officinalis (20053,20057), which grew out in the open in a weedy manner as in C. pubescens, also C. pubescens (20065) on which was noted for the first time the disease caused by the organism called Elsinoe cinchonae, also Ladenbergia sp. (20058, 20064). Returned via Río Naranjo (20072-20074), where C. pubescens was common in the brush on the sides of the canyon, to San Agustín. The Lavaderos area has been a moist forest but is cleared now except in patches.

12 Went up the valley of the Río Naranjo to Quebrada la Candela (20075-20139) where the same species found on Lavaderos ridge are found.

13 Worked on the ridges above Quebrada la Candela.

14 Returned to San Agustín (~~20139-20140~~ (20140-20141) and back to Pitalito.

15. Went to Garzón.

16. Went to Neiva.

17. Went to Bogotá.

18-22 Bogotá.

Cundinamarca
Meta

22. Left for Villavicencio via Caqueza and the Río Negro, arriving in the evening.

22-26 In and around Villavicencio.

24 Went to Caño Tigre (20142-20156) and to the Río Ocoa (20157-20172). These two localities represent the foothill type and the piedmont type of vegetation (acc. Marston Bates).

25 Went out in the llanos past Apiay (20173-20199) to have a look at the llanos type of vegetation. I judge the grassland here to be maintained by fire. The soil is relatively sterile.

Cundinamarca 26 Returned to Bogotá.

Feb. 26-Mar. 7 Bogotá

28 Went for the day to the Páramo de Cruz Verde, south of Bogotá (20200-20267), which is at the upper edge of the zone of subpáramo which was probably mostly wooded at one time but is now brushy and with occasional patches of real páramo.

Mar. 7 Went to Cali via Girardot, Ibague, Quindio Pass.

Valle

8-9 Cali. Met Cuatrecasas, Mrs. Dryander, and Dr. Ciro Molino G.

Cauca 9 Went to Popayán, Cauca.

Mar. 9-23 Popayán and vicinity.

14 Went via Río Molino (20278, 20298), Río Anambio (20279-20297) to Puracé (20299-20303) and back to Popayán. Saw much Cinchona pubescens (20278) just above Popayán and at Puracé found C. pitayensis (20300, 20302) which is certainly specifically distinct from anything that we have so far from Colombia. The land up this far has been almost completely cleared. There are some patches of woods still left above Puracé but very little. C. pitayensis seems to demand a higher altitude than the species we have seen before. Puracé is 2646 m. and the forest where some trees remain is much higher.

19 Went via Piendamó (20304-20307, 20338-20341) to Finca El Salado, near the confluence of the Río Machete with the Río Piendamó (20308-20337) and returned to Popayán. Cinchona pubescens (20337) is common here, in thin rather cut-over woods on the plateau.

23 Left for Pasto, got to La Unión. Between Popayán and La Unión the country is practically entirely cleared, only a few patches of brushy woods remaining in ravines. A few trees of Cinchona pubescens were seen in these just south of Popayán. The valley of the Río Patia is very dry and sterile. At La Unión the country becomes very mountainous.

24 Went from La Unión to Pasto. This trip is extremely mountainous, with some places still somewhat wooded, and with scattered Cinchona pubescens here and there at moderate altitudes. Most of this area is intensively cultivated, even though too steep for ordinary practices.

Putumayo

March 26 Went via Laguna de La Cocha, Páramo de San Antonio de Bordoncillo ~~[illegible]~~ (20342-20345) to ~~[illegible]~~ El Valle de Sibundoy all in Putumayo. ~~This~~ Sibundoy is obviously an old lake bed, drained but still marshy in the center. The surrounding ~~[illegible]~~ mountains are wooded but clearing is going on very rapidly on the lower slopes.

27 Went over the old horse trail to Sachamates, a ~~b~~ark-packing camp from which many tons of bark have been shipped. (20346-20390).

28 Sachamates. Looked at the several trees whose bark is being cut for Cinchona. None of them are Cinchona. One is a Ladenbergia, the res~~t~~ not even Rubiaceae. Found a tree of the variety of Cinchona officinalis previously known from the San Agustin region.(20374). It is apparently not at all common here and perhaps not at home in this dense wet forest. Ladenbergia sp. (20380) is occasional through the forest. Much money has been wasted here in cutting worthless bark.

29 Went via the upper affluents of the Río Mocoa as Río Susunga (20391-20399), and Río Minchoy (20400-20403), and the upper Río Putumayo (20404~~-20406~~) to Sibundoy (20405-20406).

Saw a few trees of Cinchona pubescens (20399) on Río Susunga.

Nariño

30 Returned to Pasto.

Mar. 31-April 3 In and around Pasto.

Putumayo

2 Went to El Encano, on the Laguna de La Cocha (20407-20436).

This valley, surrounding the lake is beautiful and well wooded, with considerable Cinchona pitayensis (20414, 20432) and, formerly much Podocarpus sp., pino colombiano, which has been so lumbered out that it now cannot be seen without ~~going~~

going 4 or 5 hours in by horse. The number of species of Rubus here is amazing, some of them with delisious fruits.

Returned via a high pass (20437-20448) to Pasto.

3 Went to Buesaco. (20456-20461)

4 Went, via La Unión (20449-20454), San Jose (20455) to Popayán. Cinchona pubescens (20453, 20455) is occasional on the cut-over slopes around La Union and San Jose in fence-rows, ravines, etc.

4-7 Popayán.

7 Went to Cali.

7-10 Cali.

10 Went to Timba.

11 Went with Sully Granger up the Río Timba to a finca on the ridge between Quebradas Silencio and Chupadero.

12 Explored the headwaters of these two quebradas (20462-20489) finding considerable Cinchona pubescens (20464, 20468, 20472) including some very large trees. The highest parts of the cordillera here are still wooded, but it is being cleared as rapidly as the owners can clear it.

13 Returned via the same ridge (20490-20492) and the Río Timba (20493-20500) to Samaria, El Valle, (20501-20531), above Timba. Ladenbergia magnifolia (20495) is common around the Río Timba.

14 Returned by train to Popayán. In the region of Dolores the plateau is covered by second-growth Ladenbergia magnifolia with Cinchona pubescens coming in very commonly as Piendamó is approached. The country is a sterile rolling plateau that has been cleared and over-grazed and is going back in places to a scrubby second-growth.

14-19 Popayán.

Nariño

April 20 went to Pasto.

21-24 Pasto.

24 Left for El Bordo via Buesaco (20532-20536).

Cauca

25-27 El Bordo. Ill.

27 Went to Popayán.

28-May 4 Popayán. Ill.

Nariño

May 4 Went to Ipiales by air, then drove to Pasto.

4-7 Pasto.

7 Went to Ipiales (20537-20539) then flew to Popayán.

Cauca
Valle

7-8 Popayán.

8 Went to Cali.

8-10 Cali (20540-20543).

Cundinamarca

10 Flew to Bogotá.

10-21 In and around Bogotá.

17 Went to San Miguel (20552-20559), Fusagasugá, and La Aguadita (20544-20551). In the ravines below San Miguel toward Fusagasugá the slopes are covered with a wet mossy forest, largely logged over and filled with Chusquea and thick underbrush. Cinchona pubescens (20555) and Ladenbergia sp. (20552-20553) are common, growing to large size. In the stream valley above La Aguadita the forest has been largely cut off but an open second-growth has replaced it. In this Cinchona pubescens (20551) and Cinchona officinalis (20545) are growing together and there are plants that look like hybrids (20547, 20549) growing w ith them.

Atlántico

May 21 Flew to Barranquilla.

U.S.

22 Flew to Miami.

23 Flew to Washington.

June 26 Went from Washington to Miami.

27 Miami.

Atlantic Continental

28 Went from Miami to Barranquilla.

29 Flew from Barranquilla to Bogotá.

29-July 15 In and around Bogotá.

6 Drove out to Fontibón (20562-20568).

11 Climbed up the Quebrada El Chicó, north of Bogotá, up to the páramo above (20569-20612).

Huila

July 15 Went to Neiva.

15-18 In and around Neiva. (20613).

17 Drove to Gigante and back.

Cundinamarca

18 Returned to Bogotá.

18-Aug. 4 Bogotá.

Aug. 4 Left for the Sumapaz region. Went from Bogotá to Pasca.

Aug. 5/6 Pasca (20614-20642)

7 Went from Pasca up to the páramo via La Constancia (20643-20647), over the ridge between Río Juan Viejo and Quebrada Atadero (20648-20650) to Laguna Larga (20651-20660).

8 Went via Laguna Negra (20661-20664), Quebrada Honda (20665-20676), Cuchillo Andabobo, Alto San Juan (20677-20679) to the headwaters of the Río San Juan.

8-12 Headwaters of Río San Juan (20680-20792). This is all extreme páramo, but with a tiny patch of woods of Gynoxys sp. (20700) in a sheltered, cirque-like valley.

12 Went down the Río San Juan via Los Amarillos (20793-20794), San Juan (20795-20800) to the Río Las Vegas.

13 Went via Quebrada Los Chorreros (20801-20804), to Finca Tunal, Quebrada El Tunal (20805-20809), near La Concepción (Sumapaz).

14 Went to Concepción and back.

Meta

15 Went over the páramo to Finca Totuma on the Río Arroz, Meta.
where we established headquarters.

16-19 Finca Totuma (20810-20853).
(20854-20859)

19 Went over Páramo de las Cruces, south of Río Arroz, to
Río Grande (?).

20-21 Río Grande (20860-20884).

22 Went down the Río Grande to its confluence with the
Río de Nevado ~~xx~~ (20885-20894) and up this for a short
distance. Although the tremendous ravine of the Río
Grande is thickly wooded, it is mostly Alnus/ sp. and
no Cinchona was seen. On the steep slope west of the
Río del Nevado both Cinchona officinalis (20885, 20887,
20889, 20890, 20892) and C. pubescens (20891) are found,
the former quite common.

23-27 Cut our way up the west slope of the canyon of the Río del
Nevado (20895-20903) to the Río de las Cruces, then up to
the Páramo de Las Cruces.

28 Crossed Páramo de Las Cruces (20904-20908) to Finca Totuma.

29-30 Finca Totuma (20909-20922).

31 Went to confluence of Río Arroz with Río del Nevado (20923-
20934).

Sept. 1 Went down Río del Nevado (20935-~~20955a~~ 20955a) to a place
where there was supposed to be a large stand of Cinchona.
There wasn't.

2 Returned to confluence of Río Arroz (20956-20973) and to
Finca Totuma.

Cundinamarca 3 Went to Finca Tunal, at Quebrada El Tunal, Cundinamarca.

4 Went down the Río Sumapaz to Cabrera.

5 Went up Quebrada Negra (20974-20977) across a more/ or less

level plateau covered with Magnificent forest, growing on a broken quatrzite substratum. Cinchona pubescens (20974) is occasional here, as is C. officinalis (20976) though the latter has been almost completely harvested. Returned to Cabrera.

6 Went via a plateau northwest of Cabrera (20978-20986) where Cinchona officinalis (20986) was fairly common but has been mostly harvested, to San Bernardo (20987-21014). The country about San Bernardo is all cleared and in coffee.

7 Went via Río Cuja (21015), Fusagasugá, Quebrada Malagana (21016-21023), San Miguel to Bogotá.

9-22 Bogotá and vicinity.

14 Went via Facatativá and Albán (21024-21026) to San Bernardo (not same as that above) (21027-21031) and back to Bogotá. No Cinchona was located in various patches of woods around San Bernardo, but on the slope above Albán up to the pass at Los Alpes C. pubescens (21024) is quite common in patches of second growth.

19 Drove to Tequendama Falls (21032) and back.

22 Left Bogotá for Ipiales. Drove to Ibagué, Tolima.

23 Went over the Quindío Pass to the Cauca Valley to Cali, El Valle.

24 Went via Corinto, Palo, and Santander to Popayán, Cauca.

25 Popayán.

26 Went via Dolores (21033-21034), El Bordo (21035-21041) to La Unión, Nariño.

27 Went via Morasurco Ridge (21042-21058) to Pasto.

28 Went via Río Bobo (21059-[illegible]) to Ipiales, picked up Davis, and went back to Pasto.

Sept. 29 Pasto

~~(21092-21094)~~

30 Went via Río Bobo (21060-21062) and Tuquerres to Piedrancha.

Oct. 1-2 Went down the Río Guabo (21063) to the Curcuele area near San Miguel (21064-21091, 21095-21108), and returned to Piedrancha (21092-21094). Here at altitudes around 2000 m. one form of Cinchona pubescens (21087, 21089) is very common, great crops of sprouts coming up year after year in clearings, many trees in the second growth thickets. This is called "quina amarilla". A Ladenbergia (21077, 21088) called "quina roja" is also common here. A few hundred meters up the mountain another form of Cinchona pubescens (21103, 21105, 21107) called "quina lanuda" because of its extreme hairiness becomes very common.

3 Went up the Río Guabo to Quebrada Panaqual (21109-21135) and back. A small mancha of Cinchona pitayensis (21112) was seen in the small patch of woods remaining in the quebrada. Most of the area has been thoroughly cleared and burned.

4 Went, via Mallama and Oscurana around the east and north shoulders of Volcan Gualcala (21136-21138) to the upper Río Gualcala (21139-21142).

5 Returned, via Quebrada El Cristo (La Bombona region)(21143-21157), n.e. and e. slopes of Gualcala (21158-21175), Guachique (21176-21178), to Oscurana. In the drainage of Quebrada El Cristo is a considerable area of wet forest which stretches almost to Guachaves containing a fair scattering of Cinchona pitayensis (21148, 21150, 21152, 21154, 21156, 21157), most of which has been harvested in the El Cristo portion of the area.

Oct. 6 Went from Oscurana (21179-21188) via Mallama (21189-21197) to Piedrancha.

7 Went via Curcuele, Ricaurte, Altaquer, and Junin to Barbacoas.

7-14 Barbacoas and vicinity.

9 Went up the Río Telembí to Mongón, the camp of the gold mining company that operates a dredge here. (21198-21208) There is extensive tall wet forest here but no sign of Cinchona.

10 Collected south of Barbacoas along Río Guagui (21209-21215). The forest is rather decadent here. Found no Cinchona.

11 Went to Pimbí (21216-21228) and returned to Barbacoas. The area around Pimbí is thickly wooded, though the trees are in general small. Castilla rubber was being harvested. One small colony of Cinchona barbacoensis (21221) was found. It is a vine rather than a tree.

13 Collected up the river from Barbacoas (21229-21247).

14 Returned via Junin (21248), Piedrancha and Tuquerres to Pasto.

15 Went to Laguna de La Cocha (21249-21250) and back to Pasto. The Cinchona pitayensis here has all been harvested. The stumps are all sprouting vigorously from the roots, even when out in the open. These sprouts were being attacked by a lepidopterous larva. (The same larva was sent in from Argelia, in the Cordillera Occidental, there also on C. pitayensis.)

16 Went via Morasurco Ridge (21252-21253) to Chachaguí (21254-21259) and back to Pasto. Cinchona pitayensis (21252, 21253) is scattered through the wet forest on Morasurco Ridge, but has largely been harvested. C. pubescens (21255, 21259) is common around Chachaguí in patches and remnants of woods and second growth. This is affected with Elsinoe cinchonae.

Oct. 17 Pasto.

18 Went via San Bernardo to La Cruz.

18-21 La Cruz ~~and~~ (21260-21270) and vicinity.

20 Went up to the ridge between the Río Tajumbino and Quebrada del Salado (21270b-21280) east of Volcan Doña Juana. The upper portions of this ridge are covered by dense wet forest with occasional Cinchona pitayensis (21273, 21278, 21279, 21280) which is being harvested.

21 Went via San Bernardo (21281), San José (21282) to La Unión (21283). At each of these places Cinchona pubescens was common and was collected in patches of second-growth or along roadsides.

22 Went via Timbío (21284) to Popayán. Cinchona pubescens is abundant in second growth near Timbío.

23-25 Popayán and vicinity.

23 Went out to the Mosquera finca, 6 km. n. of Popayán, where the Cinchona Mission nursery is located. Collected Cinchona pubescens (21285) in second growth in a nearby ravine. This qhole area is in pasture, with trees along fence-rows and in ravines.

25 Went via El Palo to Tacueyó,

26 Went up the Río Palo to the Río Santo Domingo and up this for a distance to the camp and bark drier of Luis Nieto (21286-21307). Here is a forest of ~~Wax~~ wax palms (Ceroxylon sp.) which is rapidly being cut. In the thick wet forests on the slopes above Cinchona pubescens (21286, 21292) and C. pitayensis (21287, 21293) grow together, though sparingly. No evidence of hybridity was observed.

27 Returned via Río Palo to El Palo, ~~then~~ to Corinto where we

Valle

looked over Nieto's drying establishment, then to Cali.

Along the Río Palo Tephrosia toxicaria (21308) was common on the relatively dry brushy slopes.

29-31 Cali and vicinity.

29 Went out to the experiment station at Palmira (21309-21311)

Caldas

Tolima

31 Went via Bugalagrande (21312), Cartago, Pereira, Filandia (21313-21316), Circasia (21317-21319), Armenia, Quindío Pass, to Ibagué. Near Filandia and Circasia in patches of second growth and in coffee plantations Cinchona pubescens (21313, 21317, 21319) is common.

Nov. 1 Went via Girardot, Fusagasugá, La Aguadita (21320-21323) to

Cundinamarca

Bogotá. Collected Cinchona officinalis in second growth at La Aguadita (21321).

1-15 Bogotá and vicinity.

5. Went to Fusagasugá via Quebrada Aguabonita (21324-21327) and back to Bogotá. On the steep wet densely wooded slopes of the Quebrada Aguabonita Cinchona officinalis (21324, 21326) is being harvested. Ladenbergia sp. (21327) is also common.

7 Went to Páramo de Cruz Verde and returned.

Tolima

15 Went to Icononzo.

16 Went to Balcones on the Río Sumapaz (21328-21329). Here the Cinchona is completely exhausted. They have been harvesting much C. officinalis.

17 Went over the Río Sumapaz-Río Cunday divide, via Aurora (21330) to Andalucia. Tolima This country is almost completely cleared. Cinchona has been harvested in many parts but is exhausted. Collected Ladehbergia magnifolia at Aurora where it is common in second-growth in ravines.

Nov. 18 Went to La Colonia Agricola (21331), Río Cuinde Feo (21332-21341), Río Cuinde Blanco and back to Andalucía. In the little wet forest left around the headwaters of the two rivers is occasional Cinchona pubescens (21332) and C. officinalis (21334). Most of the region is completely cleared.

19 Returned to Bogotá.

20 Bogotá.

21 Went to Laguna Guatavita (21342-21369) and back. This country all páramo, probably secondarily so.

22 Went to Choachí (21370-21376, 21388).

22-25 Choachi and vicinity.

23 Went across the Río Blanco to Quebrada Salitres (21377-21382) where Cinchona pubescens (21381) and a peculiar variety of C. officinalis (21380) were occasional in thin woods, not especially wet.

24 Went to the crest of the Cerro de Fonté, in the Ferrolarada district (21383-21387) where Cinchona officinalis (21385, 21387) is being harvested and where Ladenbergia sp. (21383) is common in wet forests. Much of the country is cleared. Woods are restricted to sterile crests and upper slopes.

25 Returned to Bogotá.

26-Dec. 7 Bogotá and vicinity.

Dec. ~~Dec~~ 5 Went to El Colegio and to the west slope of Peña Blanca (21389-21392) where in thick wet forests Cinchona pubescens (21389) and C. officinalis (21392) are both common.

7 Went to ~~Lake~~ Santuario on Laguna de Fuquene (21393-21395).

8 Went via Puente Nacional (where we found Cinchona pubescens var. rosulenta 21396, 21397), Barbosa, to Bucaramanga.

Dec. 9 Went to Puerto Wilches.

~~10 Entered Puerto Wilches~~

10 Left by riverboat for Gamarra, Magdalena.

11 Arrived Gamarra. (21398-21403).

12 Drove to the end of the road at Torre de los Indios (21309-21312) and rode the rest of the way to Ocaña, N. de Santander.

13 Drove to Convención, then rode to Balcones (21404-21408) and returned to Ocaña. In moist patches of woods near Balcones Cinchona pubescens (21404), Ladenbergia hookeriana (21405) and Cosmibuena sp. (21407) were occasional. Cosmibuena is more abundant than I have seen it before. The Ladenbergia is the "quina morada" bark that the local people here have been harvesting so much of. It is a close relative of the plant called Cinchona henleana.

14 Rode up to La Camarona on the divide between Ocaña and the Magdalena drainage and back (21413-21423). Cinchona pubescens (21420) and Ladenbergia Hookeriana (21413) and Ladenbergia sp. (21416, 21422) occur commonly in the wet forests.

15 Returned via the cableway to Gamarra. Gained a good birdseye view of the country. The vicinity of Ocaña is seriously eroded.

16 Flew to Barranca Bermeja, then drove to Bucaramanga.

17 Drove to Bogotá.

18 Bogotá.

19 Flew to Barranquilla.

20 Flew to ~~Jamai~~ Kingston, Jamaica.

21 Flew to Miami.

22 Miami.

23 Flew to Washington.

Jan. 27, 1944 Left Washington arrived at Miami.

28Flew to Barranquilla.

29-Feb. 1 Barranquilla (21424-21440) and vicinity.

~~Feb~~ 31 Drove to Cartagena and back.

Feb. 2 Flew to Bogotá.

2-5 Bogotá.

5 Drove to Choachí.

6. Drove down to near Servitá (21441-21446), and returned to (21442, 21443) Bogotá. Remijia pedunculata is locally abundant in the moist forests below Servitá. This is very close to the locality called Susumuco, the type locality for Cinchona pedunculata Karst.

7-17 Bogotá and vicinity.

13 Drove to Fusagasuga via San Miguel (21447) and back.

17 Went to Guasca.

18 Went ~~xxxxxx~~ over the Páramo de Guasca (21448-21466). via the Río Juiquin (21467-21468) to the Río Blanco/ ~~in~~ (21469-21493) in the Río Guavio drainage. Ladenbergia sp. (21467) is common in the wet forest on the Río Juiquin (Valencia later found Cinchona officinalis (V. 212, 213, 214, 215) here also). (21470, 21471, 21472, 21473, 21473, 21475, 21477, 21478) Cinchona officinalis is common in the wet forests of the Río Blanco up to 2700 m. None was seen above this, although the type of forest did not seem to differ significantly.

~~19~~ This region, though officially a forest reserve, is being cleared rapidly.

19. Returned to Bogotá.

20-26 Bogota.

26 Left for Antioquia. Drove via Facatativa, La Sierra (21494) where I collected Cinchona pubescens growing in a coffee

Tolima

plantation, Cambao, to Armero.

Caldas

27 Drove via Mariquito, Fresno, Las Delgaditas (21495-21498), Brasili, Manizales, to Anserma.

Antioquia

28 Drove via San Clemente (21499-21502) where Cinchona pubescens (21502) and Ladenbergia sp. (21501) were occasional in brushy thickets in cleared land, Alto San Miguel (21503), where Cinchona pubescens persisted along the roadside, to Medellin.

29 Medellin.

Choco

Mar. 1 Went by rail to Bolombolo, then drove to Carmen de Atrato.

2. Went to Río Girardot (21504-21509) and up the ridge between Río Girardot and Quebrada Palestina (21510-21525). This is thick wet forest, but no Cinchona was seen. Back to Carmen.

3 Rode to the Río Dauro (21526-21529). Cinchona pubescens (21526, 21528, 21529) is occasional in patches of brushy woods in this largely cleared country.

(21530-21537)

4 Rode up to Alto la Unión, s. of Alto Plateado which is well wooded with wet forest with occasional Cinchona pubescens (21532) and Ladenbergia sp. (21536). Returned via Río Dauro (21539) (21538-21543), where Ladenbergia magnifolia was common in the wooded ravine of the river, Alto de Carmen (21543-21547) where Cinchona pubescens (21543, 21544) and Ladenbergia sp. (21546) were occasional, Quebrada El Sucio (21548-21551), to Carmen.

5 Carmen.

6 Rode north via Río Carmen (21552-21562), Alto de la Raya (21563-21568), Quebrada La Fragua (21569-21571a) where we found an interesting variety of Cinchona pubescens (21571), to Cruces, on the Río Pabón.

Antioquia

7 Cruces (21572-21584). The slopes of this valley are covered

with rather wet forests with Cinchona pubescens (21573, 21574, 21578, 21579, 21580) and Ladenbergia sp. (21576) very common.

Chocó

8. Returned via Alto de la Raya (21585) to Carmen, and drove to Bolombolo.

Antioquia

9. Went by rail to Medellin.

10 Drove to Don Matias (21586-21588). On the divide just south of here Cinchona pubescens and Ladenbergia sp. (21586) were found in a patch of brushy decadent woods.

11 Drove over a rolling plateau through Santa Rosa del Oso, by the ridge south of the Río Nechí (21489-21495) , through the valley of Río Nechí (21596-21597) where we collected Cinchona pubescens (21596) in second growth, Quebrada Santa Rita (21598-21602) where a very peculiar form of Cinchona pubescens (21598-21602) was common, to Angostura (21603-21605) where we encountered the same variety of C. pubescens (21605) in a ravine below town.

12 Angostura. (21606-21633). C. pubescens (21628) in a brushy fence-row.

13 Rode to Quebradona (21635-21645) via El Salto where there was C. pubescens (21634) in a thicket in a pasture. Along the slopes above Quebradona in a decadent forest C. pubescens (21636, 21637, 21638) is common, Ladenbergia magnifolia (21640) and Ladenbergia sp. (21643) are infrequent. Back to Angostura and drove to Yarumal.

14 Drove toward Valdivia to Quebrada Tobón (21649-21662) , around the upper part of which is Cinchona pubescens (21652, 21654), a very queer form of Cinchona officinalis (21650, 21658) and what appears to be a swarm of hybrids (21649, 21659, 21662) between them, back via Alta Buena Vista (where

the same form of C. officinalis (21648) occurs in patches of forest, via Hoyo Rico (21646-21647), near Santa Rosa de Osos, where small trees of the same form of C. officinalis (21646) was again found in second growth, (in these places there seems to be no caontamination with C. pubescens), to Medellín.

15 Went via Alto San Miguel (21663-21669), where Cinchona pubescens (21664) and Ladenbergia magnifolia (21665) persist in second growth along ravines, to Río Sucio (where C. pubescens is (21670) is common as a scattered tree in pastures, San Clemente (21671-21676) where C. pubescens (21676) is common for some miles in brushy woods along the summits of the ridges, Manizales, Brasili (21677-21680), Fresno, where C. pubescens (21681) occurs in second growth along roadsides, to Honda.

17 Went via Armero, Cambao, La Sierra, where Cinchona pubescens (21682) grows in and around coffee plantations, to Bogotá.

18 Bogotá.

19 Went to the Páramo de Guasca (21683-21703) and returned to Bogotá.

20-April 3 Bogotá.

Apr. 4 Went via Tocancipá (21704), Padua (21705-21706) to Paipa (21707).

5 Went via Belén and the Páramo de Consuelo (21708-21716), the Río Susacón (21717-21722) to Pamplona.

6 Went to Cúcuta.

7 Cucutá (21723-21724).

8 Went to Gramalote (21725-21735) where C. pubescens occurs in second growth at about 2000 m. altitude and C. officinalis (21725, 21726, 21730, 21732, 21734, Kernan 99, 100) is abundant persisting in clearings and pastures at from 2300 to 2400 m., returned to Cúcuta.

Venezuela
N. de Santander

Apr. 9 Cúcuta. Went to San Antonio, Venezuela, and back, then to Arboledas.

10 Went to Quebrada Babilonia (21736-21751) where Cinchona (21737) pubescens grows in wooded ravines at about 1600 m. and C. officinalis (21740, 21744, 21745, 21746, 21747, 21748, 21750) which is common in clearings in wet forest at 2400-2500 m. The tree is much more common as an old field tree in clearings than in the actual forest.

11 Returned to Cúcuta.

12 Went via Río Pamplonita (21752-21757) to Pamplona.

13 Went via Quebrada Zapa (21758-21759), La Corcoba (21760-21765) where Cinchona pubescens (21765) is common in partially cleared forest, to Bucaramanga.

14 Bucaramanga.

15 Went to La Gomez (21766-21789) where Remijia purdieana (21776, 21789) grows abundantly on hot white-sand flats where it is kept to the size of a shrub in most places by repeated burning. Returned to Bucaramanga.

16 Went via the canyon of Río Chicamocha, at Pescadero, (21790-21792) to Velez.

17 Went via El Retiro (21793-21799), Helida, where Ladenbergia macrocarpa (21800) was growing isolated in a clearing in wet forest, Villa Alicia, where a peculiar variety of Cinchona pubescens (21803) was growing in a fence-row, Jordan (21801-21802), to Landazuri and back to Velez.

18 Went to Jordan ~~where~~ (21805-21820) where we found Cinchona henleana (21805, 21806, 21812) and Remijia pedunculata (21818, 21819, 21820) were abundant in remnants of wet forest, and back to Velez where we found Cinchona pubescens (the form called C. rosulenta)(21804) scattered commonly in patches of second growth just outside town.

~~April 19~~

April 19 Went to Landazuri.
(19821-21844)

20 Went to San Juan, at the foot of the mountains along the Carare road, near Cimatara, where Remijia peduncuhata (21837, 21839, 21840, 21842) and Remijia bracteata (21830, 21832, 21838, 21841) were growing together on steep slopes in wet forest, the former extending higher and the latter lower, but distinctly overlapping. Both were abundant. Returned to Velez.

21 Went to Barbosa, above which Cinchona pubescens (C. rosulenta) (21845) was fairly common on brushy slopes and in ravines.

Boyacá Cundinamarca

22 Went via Moniquirá (21846-21856) where both C. pubescens (21846, 21847, 21851) and C. officinalis (21852, 21853) occur occasionally in roadside thickets, Tunja, to Bogotá.

22-May 6- Bogotá and vicinity.

Apr. 30 Went via San Miguel (21857-21867) to Fusagasuga and back via Tequendama Falls (21868) to Bogotá.

May 1 Went via Facatativa to La Sierra where Cinchona pubescens (21869, 21870) occurs commonly in and around coffee plantations on steep slopes, to Quebrada Chiniata (21871-21876) where Cinchona pubescens (21875) was found on a brushy slope. Returned via Madrid (21877-21878) to Bogotá.

Boyacá Santander

May 6 Went to Paipa (21879-21893).

7 Went via Duitama and Río Surba (21894-21903), Páramo de Birolín (Virolín)(21904-21907), head of Río Negro, where Cinchona pubescens (21908) is common at about 3050 m. altitude in broken forest, only seen above Quercus belt, and to Charalá.

8 Went to Coromoro (21909-21918) where Ladenbergia sp. (21909,

May 21911) is common in second growth on steep sterile slopes and Cinchona officinalis (21913, 21915, 21916, 21917, 21918) is common but almost all harvested in wet forest on steep slopes. Returned to Charalá.

9 Went via San Gil to Barbosa.

Antioquia 10 Went via Velez to Puerto Berrio.

Santander 11 Went from Puerto Olaya across the flats of the Magdalena Valley (21920-21923), via San Juan (21919) to Jordan and Velez.

Cundinamarca 12 Returned to Bogotá.

13-14 Bogotá.

Meta 15 Went via Choachí to Villavicencio.

16 Villavicencio (21924-21952) and vicinity.

17 Went via Servitá (21953-21959) where Remijia pedunculata (21959) is common in the wet woods on steep slopes to Choachí.

Cundinamarca 18 Choachí. Rode across the valley of the Río Blanco to where there are occasional Cinchona officinalis (Grant coll.).

19 Returned to Bogotá.

20-22 Bogotá.

23 Went to Ubalá.

24 Went to Gachala (21962-21964).

25 Rode south to San Ysidro, where much Cinchona officinalis has been harvested (Grants coll.)

26 San Ysidro.

27 ~~27~~ Returned to Gachalá (21965).

via the Medina trail

May 28 Rode south to the Cordillera de Farallones (21966-21972) where Cinchona officinalis (21969) and Ladenbergia sp. (21968) were found in the second growth on steep slopes. Returned via part of the Mambitá trail.

29 Returned via Ubalá to Bogotá.

30-June 24 Bogotá and vicinity.

June 12 Went to the low hills in the Sabana de Bogotá south of Suba (21973-21987) and returned to Bogotá.

24 Went to Choachí (21988).

25 Returned to Bogotá.

26 Flew to Cali.

26-July 3 In and around Cali (21989-22002).

July 1 Went via Río Yumbo (22003-22007) where Cosmibuena sp. (22005, 22007) is rather common in brushy ravines, to Bitaco, where Kyburz has a farm called Green Valley. Here he has some Glenn Dale Cinchona seedlings planted, as also has Ciro Molino Garces. These are planted in clearings and where the clearings are kept weeded they are doing well, but the largest part are not weeded. In this portion, the only plants that have survived are in the row or two nearest the edge of the forest, where the weeds have not flourished so well. Ladenbergia sp. (22008) is very common here, the seedlings coming up everywhere. Returned to Cali.

3 Returned to Bogotá.

3-27 In and around Bogotá.

9 Drove via Ubaque (22010-22019) to Choachí (22009) and back.

16 Climbed up the Páramo of El Chicó (22020-22034) just north of Bogotá.

25 Drove to Granadas, on Río Seco (22035-22046), s.w. of Charquito and back.

Cinchona pubescens (22035, 22039) is occasional in wet woods. C. officinalis has all been harvested in the region.

July 28 Flew to Bucaramanga (22047-22053).

29 Returned to Bogotá.

29-Aug. 5 Bogotá and vicinity.

30 Walked around headwaters of Quebrada San Francisco (22054-22064) and Páramo de Guadalupe (22065) above Bogotá.

Aug. 5 Drove via Guayabital and Servitá (22066-22071) to Villavicencio (22072-22078). Remijia peduncluata (22068, 22069, 22070, 22071, 22072, 22073, 22075, 22087) is very common locally in the woods between Servitá and Villavicencio.

6 Returned via Buenavista (22079-22088) to Bogotá.

6-16 In and around Bogotá.

16 Flew via Medellín and Barranquilla to Cienaga. Drove to Santa Marta.

16-19 Santa Marta (22094-22128) and vicinity.

17 Went to Fundación (22089-22093) and back by rail.

19 Flew to Barranquilla.

19-21 Barranquilla (22129-22136).

21 Flew to Bogotá.

22-26 Bogotá.

26 Flew via Honda, Medellin, and Turbo to Balboa, Panama.

27 Flew to San Jose, C. R.

27-29 In and around San Jose.

29 Flew to Guatemala City.

29-Sept. 4 In and around Guatemala City.

31 Drove out to the Agricultural school at near Lake Amatitlan.

Sept. 4 Flew, via Mérida, to New Orleans.

5 Flew to Washington.

Oct. 12 Left by train for Miami.

13 Arrived Miami.

Panama 14 Flew, via Camaguay, to Balboa, C. Z.

14-18 Balboa and vicinity.

17 Visited the Summit gardens.

Cundinamarca 18 Flew to Bogotá.

19-Nov. 6. Bogotá and vicinity.

(22159)
29 Went to Santander (Santandercito), below Tequendama Falls and back to Bogotá.

Nov. 1 Collected around the mouth of San Francisco Canyon above Bogotá (22160-22181).

Boyacá Nov. 6 Went to Belén (Boyacá).

7 Went via Río Soapaga (22182-22208) to Socha. ~~(22209-22227)~~

8 Socha. (22209-22227).

(22263-22264) P
9 Rode via Río Gomeza to Buenavista, at head of Río Cauto.

10 Buenavista (22228-22262) where Cinchona officinalis (22228, 22230, 22236) is common in wet forest at around ∅ 2800 m.

11 Returned via Las Mesas (22265-22271) and ~~h~~ Páramo de Laja (22272-22281), Río Gomeza (22282-22311) to Socha.

12 Returned via Belen, Sogamoso, Lake Tota, and Tunja to Bogotá.

Cundinamarca 13-21 Bogota and vicinity.

18 Went to hills above Usaquen, north of Bogotá (22312-22330).

20 Went to Zipaquirá and back.

21 ~~Went~~ Drove to Girardot.

Caldas Valle 22 Went over Quindio Pass (22331-22333), where Cinchona pubescens found but not common (22332) to Cali.

Cauca 23 Went via Puerto Tejada, Santander, and Pescador (where Ladenbergia magnifolia (22334) is very common, to Popayán.

23-27 Popayán and vicinity.

24 Went out to the Cinchona nursery at the finca of E. Mosquera, 6 km. n. of Popayan (22335-22336). An estimated 625,000 seedlings were growing here, many of them ready to be planted out. Most are Guatemala succirubra, but some are C. pitayensis and some local C. pubescens. Also, Mosquera has a few Glenn Dale seedlings left alive. Has them planted out and is rooting cuttings from them.

Huila Cinco

26 Drove via Purace, Laguna San Rafael (22337-22359), San Juan (22360-22368), Tejira (22369-22371) where Cinchona pubescens (22371) is occasional in wet forest, Santa Leticia (22372-22374) where C. pubescens (22374) is also found in wet woods, to Roblal (22375-22380) where the "roja" variety of Cinchona officinalis (22377) and Ladenbergia sp. (22378) are occasional in wet woods on steep slopes. Returned to Popayán.

Valle

27 Drove to Cali.

Caldas

28 Went via Buga (22381-22382), Bugalagrande (22383-22384), Sevilla (22385) to Armenia, Caldas.

Tolima Cundinamarca

29 Went over the Quindio Pass (22386-22389b), via Ibague, Chicoral (22389c), Girardot, El Colegio, to Bogotá.

30-Dec. 17 In and around Bogotá (22390-22414).

Valle

18 Flew to Cali.

18-21 In and around Cali.

Ecuador Guayas Pichincha

21 Flew to Guayaquil, then via Manta, to Quito.

22-27 In and around Quito (22416-22423).

23 Went down to Tumbaco (22415) and back.

Guayas

27 Flew down to Guayaquil.

28 Guayaquil. Drove out a few miles on the Salinas Road.

Peru

29 Flew to Lima.

Dec. 30-Jan. 2 In and around Lima.

1 Drove up the valley of the Río Rímac to about 3200 m. (22424-22441).

3 Flew via Chiclayo (22442-22443) to Guayaquil, then up to Quito.

3-7 In and around Quito. (22470a).

5 Drove via Aloag (22444-22447) over Corazón Pass to Los Alpes (22448-22459), where a form of Cinchona ~~pubescens~~ macrocalyx (pitayensis) (22457, 22458) was found in remaining patches of wet forest. A few plants (22450) showed signs of C. pubescens contamination (22460-22469). Went down to Ganzacoto, on the Río Quitasol, where the form of C. pubescens called "bofuda" (22460, 22463, 22466, 22467) was common on the lower canyon walls in wet ~~forest~~ more or less thinned-out forest. Returned to Quito. ~~(22470a)~~.

8 Drove via Ambato to Baños.

9 Drove down the Río Pastaza to Quebrada Estancia (22470-22480) where Cinchona pubescens (22471, 22470, 22472), C. officinalis (22478), and Ladenbergia sp. (22473, 22474) are occasional in the wet forest, the first and last in the river bottom lands, the C. officinalis on the slopes. Here the El Topo Cinchona nursery is located. Extensive seed beds of Guatemala succirubra seedlings, with a few Glenn Dale ♀ seedlings. Returned via Baños (22481) to Ambato, then went to Ríobamba.

10 Drove west via Lican (22482) to the headwaters of the Río Gradas (22483-22491), down the Río Gradas (22492-22494) to Guaranda, San Jose de Chimbo, San Miguel, over the divide and tried to go down to Balzapamba. The road was blocked, necessitating a return to San Jose. Just west of the divide a form of Cinchona macrocalyx (pitayensis) (22495-22497) was common in the scrubby forest.

Jan. 11, --Went from San Jose to the headwaters of the Río Playas (22498-22499), where Cinchona macrocalyx (22498) was collected, down to the valley of the Río Playas above Balzapamba (22500-22507) where C. pubescens (succirubra) (22500, 22501, 22502, 22503, 22504) is commonly grown cultivated in the plantations mixed with coffee. Returned via the upper canyon of the Río Playas (22508-22513) where C. pubescens of the "bofuda" variety (22513) was found, to San Jose.

12 Returned via Guaranda (22514) to Quito.

12-26 Quito (22542-22543) and vicinity.

15 Went down the Río Saloya (22515-22536) to below Chiriboga to the proposed experiment station site, and back to Quito.

Collected Cinchona pubescens (22521, 22522, 22525, 22529, 22530, 22531) at various altitudes in wet forests and around edges of clearings.

17 Went via Pomasquí to the La Condamine monument (22537-22541) and back.

26 Went via Tambillo, Aloag (22544-22549), Laguna de Yambo (22550-22556), Ambato, Pampa de Luisa (22557-22558) to Ríobamba.

27 Left Ríobamba (22563-22564) in evening by rail, went via Río Chubuga (22559-22562) to Pampa de Colta (22565).

28 Arrived at Sibambe (22566-22627) and went to El Tambo, the terminus of the railroad to Cuenca.

29 Went via Cañar and Cerro Buerán (22628-22657), Azogues (22658-22669), Río Matadero (22670) to Cuenca.

30-Feb. 1 Cuenca.

Feb. 2 Went via Azogues, Pindilic, Cerro Yanguang (22671-22689), Río Masár (22688-22690) to Santo Tomás, opposite Shoráy, north of Río Paute. On Cerro Yanguang Cinchona rugosa (22671, 22673, 22674, 22677, 22680) is common in brushy wet forest near the top of the ridge. It is quite variable.

3 Went to the valley of the Río Monáy (22691-22731) where Cinchona officinalis (22694, 22708, 22727), C. macrocalyx (22729) and 22731, C. pubescens (22691, 22696, 22699) are all found, in the patches of wet forest remaining. Hybrids between them, none larger than young saplings, may be represented by various individuals of mass coll. #22702. Ladenbergia sp. (22730) is also found in this region. Returned to Santo Tomás.

Feb. 4 Went to Hacienda Frutillas (22732-22747) and returned via Río Dandayacu (22748) and Huertaspambas, all north of (22750-22751) Río Paute, to Santo Tomás. At and near Frutillas Cinchona pubescens (22732, 22734, 22736, 22738) is common in decadent, Chusquea-filled forest. A single plant (22749) from Río Dandayacu is aberrent, possibly a hybrid between C. pubescens and C. officinalis.

5 Left Santo Tomás (22752-22761) and went via Ventanillas (22762-22776), Cerro Yanguang (22777-22784), Río Mangán (22785-22818), Río Shirincay (22819-22831), San Marcos where Cinchona macrocalyx (22824-22826) occurs in second-growth patches on cleared slopes, to Cuenca.

Agency

6-7 Cuenca.

8 Went via Tarqui, Nudo de Tinajillas (22845-22855), Santa Rosa (22834-22844), Oña (22832-22833), to Loja.(22856-22861).

Paraguay

Loja

9 Went south to the Paso de Cajanuma region (22862-22901), Malacatos (22902-22916) and Vilcabamba, and returned to Loja. At Cajanuma various collections of Cinchona officinalis (22780, 22787, 22790, 22792, 22794, 22796, 22798) were made, all in second-growth patches, and from small trees. This is the type locality for the genus Cinchona and its type species C. officinalis. Bark has been continuously harvested here since 1600 A.D. or further back. The fact that there are still trees living in the immediate vicinity tells much about the persistance of this particular variety.

10 Went west across the terrace west of Loja (22917-22922) over the Nudo de Villonaco (22923-22924), La Toma(22925-22940), San Pedro (22941), Cerro Mataperro (22942-22960), Río Chiguango (22961-22962), Río Salado (22963-22967), Río Luis where Coutarea hexandra (22968) was growing in brush along the river, to Portovelo, just below Zaruma.

El Oro

11 Went west to Monos (22969-22988) where C. pubescens is reputed to grow at altitudes low enough to be the succirubra type. We failed to find it, but secured specimens later by sending out our informant, Jualberto Rodriguez (A, B). Returned to Portovelo via La Garganta de Pinas (22989).

12 Went east via Curtincapa (22990-22993) where Cinchona pubescens (22991, 22993) was found, probably near its type locality, to the region of Hacienda Chepel, in the headwaters of Río Luis (22994-23009) where a form of C. macrocalyx (22994, 22995, 23001, 23005) and a Cinchona (23006, 23008) which I am unable so far to match, are found in the wet forests on the high slopes.

13 Returned via El Nudillo (23010-23011), Curtincapa where flowering material of C. pubescens (23012) was secured, El Tablón (23013) to Portovelo.

Loja

14 Returned via La Toma (23014-23018), Nudo de Villonaco (23019-23062), to Loja, then south to Vilcabamba.

Feb. 15 Rode south to Hacienda Guaycopamba (23063-23113), where Cinchona officinalis (23067, 23068, 23070, 23073, 23074, 23075, 23076) of the typical form, C. officinalis (23087, 23088, 23090, 23091, 23092) of the form called C. lucumaefolia, C. pubescens (23086), C. decurrentifolia (?) (23093), and Ladenbergia sp. (23089) are all found, the first at relatively low elevations (2000 m.), the others in the very wet forests higher up.

16 Hacienda Guaycopamba.

17 Returned to Vilcabamba.

18 Returned to Loja.

19 Rode east to near the top of the Cordillera Zamora (23114-23138) where Cinchona microphylla (23115, 23116, 23117, 23123) and C. macrocalyx (23125, 23127, 23129) grow in the dense brushy forest, with a population of probable hybrids between them (23126, 23128, 23130, 23138), then down the Río San Francisco (23139-23142), where Ladenbergia sp. (23139) and sprouts of Cinchona officinalis (23142) were found, to Canillones (23143-23149), where Ladenbergia magnifolia (23143) and Cinchona officinalis (23146) are found in the dense rain-forest.

20 Rode on down the Río San Francisco via Quebrada Honda (23150-23151) to Consuelo, above the Río Zamora (23152-23159) where a form that is probably related to C. officinalis (23152, 23155, 23157, 23159) and an unidentified seedling Cinchona (23153) were found in dense rain-forest, then returned up the Río San Francisco (23160-23170), finding C. pubescens (23176) on the steep slopes, over the top of the Cordillera Zamora (23178-23185) collecting what may be a large-leafed form of C. microphylla (23180), and back to Loja.

21 Drove via Zaraguro (23186-23193), Oña (23194-23217), Cumbe (23218-23225) to Cuenca.

22-24 Cuenca.

24 Flew to Guayaquil, then up to Quito.

24-Mar. 8 Quito.

25 Climbed part way up Volcan Pichincha behind Quito (23226-23239) and returned.

Mar. 8 Flew to Guayaquil (23240).

9 Flew to Balboa, Pa C. Z.

10 Flew to Guatemala City.

11 Flew via Merida, Yucatan, to New Orleans.

12 Flew to Washington, D. C.

PLANTS OF COLOMBIA, S. A.

CORDILLERA Oriental

Remijia pedunculata

Loc. *Just above Villavicencio*

Departamento de *Meta*

Habitat *on alluvial fan, edge of ravine*

Date *August 6* /1944. Alt. *660* m.

Coll. F. R. Fosberg No. *22087*

Det.

Remarks

found at 1 copper edge of forest, rare small tree 5 ms tall 4 cm thick, cankery bu lower part of trunk, leaves yellowish, small, veins impressed above, fls white, (stipules collected at random from same tree) sticky substance between stipules

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COLOMBIAN CINCHONA MISSION

PLANTS OF COLOMBIA, S. A.

CORDILLERA Oriental

Remijia pedunculata

Loc. Just above V. Clavijo

Departamento de Meta

Habitat on alluvial fan, edge of ravine

Date August 6 /1944. Alt. 660 m.s

Coll. F. R. Fosberg No. 22075

Det.

Remarks

small tree 5 ms tall, stem thick in lower horizontal part of trunk, mainly a group of sprouts from broken trunk, lower portion of this peeled, youngest growth sticky & copper red, flowers white

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COLOMBIAN CINCHONA MISSION

PLANTS OF COLOMBIA, S. A.

CORDILLERA Oriental

Remijia pedunculata

Loc. *Just above V. Chaparrero*

Departamento de *Meta*

Habitat *on alluvial low, edge of ravine*

Date *August 6* /1944. Alt. *660* m.s

Coll. F. R. Fosberg No. *22073*

Det.

Remarks

Small tree almost sterile, a few buds present, 6 ms tall, 10 cm diam. stalky substance between stipules

PLANTS OF COLOMBIA, S. A.

CORDILLERA Oriental

Remijia pedunculata

Loc. *Just above Villavicencio*

Departamento de *Meta*

Habitat *In alluvial soil, edge of ravine*

Date *August 6* /1944. Alt. *660* m.s

Coll. F. R. Fosberg No. *22072*

Det.

Remarks

small shrub to tree. Lvs tall stems thick, collection of stipules collected at random from same tree.

COLOMBIAN CINCHONA MISSION

PLANTS OF COLOMBIA, S. A.

CORDILLERA Oriental

Remijia pedunculata

Loc. 6 kms SE of Servita, just W. of Buenavista
4 kms NW of Villavicencio

Departamento de Meta

Habitat *steep side of Ravine, semi-shade.*

Date August 5 /1944. Alt. 1000 m.s

Coll. F. R. Fosberg No. 22071

Det.

Remarks

Tree 6 ms tall, 2 forks from near base one, 4 cms the other 5 cms thick, flowers white. (collection of stipules taken at random from branches) stickysubstance between stipules.

COLOMBIAN CINCHONA MISSION

PLANTS OF COLOMBIA, S. A.

CORDILLERA Oriental

Remijia pedunculata

Loc. 5 Km SE of Servita, just W of Buena Vista
4 Km NW of Villavicencio

Departamento de Meta

Habitat steepside forest.

Date August 5 /1944. Alt. 1000 m.s

Coll. F. R. Fosberg No. 22070

Det.

Remarks

Base of clump fused, with several other species into a common trunk, this sprout about 5 cms thick, 6 ms tall, fls white (collection of stipules taken at random from same tree)

COLOMBIAN CINCHONA MISSION

PLANTS OF COLOMBIA, S. A.

CORDILLERA Oriental

Remijia pedunculata

Loc. 6 kms SE of Servita, just W of Buena Vista. 4 kms NW of Villavicencio

Departamento de Meta

Habitat *steep side of Ravine semi-shade*

Date *August 5* /1944. Alt. *1000* m.s

Coll. F. R. Fosberg No. *22069*

Det.

Remarks

Small tree 9cm thick, about 6ms tall flowers white, collection of stipules taken at random

COLOMBIAN CINCHONA MISSION

PLANTS OF COLOMBIA, S. A.

CORDILLERA Oriental

Remijia pedunculata

Loc. 5 kms SE of Servita, just W of Buena Vista. 4 kms NW of Villavicencio

Departamento de Meta

Habitat steep side of ravine, semi shade

Date August 5 /1944. Alt. 1000 m.

Coll. F. R. Fosberg No. 22068

Det.

Remarks

Small tree from thick, about 5 ms tall flowers white, lobes reflexed

collection of stipules taken at random

COLOMBIAN CINCHONA MISSION

PLANTS OF COLOMBIA, S. A.

CORDILLERA Occidental

Ladenbergia

Loc. Near small affluent of Rio Pavas, halfway bet. La Cumbre & Buitaco, 17 Km N. N. W. of Cali

Departamento de El Valle

Habitat cleared land, hedge row

Date July 1 /1944. Alt. 1650 m.s

Coll. F. R. Fosberg No. 22008

Det.

Remarks

Tree 10 mts tall, leaves glossy, fruits reddish when not quite ripe.

PLANTS OF COLOMBIA, S. A.

CORDILLERA Occidental

Cosmibuena

Loc. N fork of Rio Jumbo, 5 Km W. N. W of Jumbo, 15 Km N of Cali

Departamento de El Valle.

Habitat wooded ravine, second growth

Date July 1 /1944. Alt. 1400 m.s

Coll. F. R. Fosberg No. 22007

Det.

Remarks

tree 10 mts tall, 20 cms thick, leaves coriaceous, smooth, turning deepred when old, fruit immature.

PLANTS OF COLOMBIA, S. A.

CORDILLERA Occidental

Cosmibuena

Loc. N. fork of Rio Jumbo, 5 Kms W. N. W of Jumbo
15 Kms N of Cali

Departamento de El Valle

Habitat wooded ravine, second growth

Date July 1 /1944. Alt. 1450 m.s

Coll. F. R. Fosberg No. 22005

Det.

Remarks

Tree 10 ms tall, 25 cm thick, leaves coriaceous, smooth turning deep red when old, flowers white, turning orange-brown when old, unpleasantly fragrant, fruit immature.

COLOMBIAN CINCHONA MISSION

21024

A. B

. dried at. 60°C dried 30°-40°C

	A_1	A_2		
g+c	1.43, 1.44		1.45, 1.46	
Ci	0.26, 0.21		0.32	0.32
Gui	0	0	0	0
TCA	1.69, 1.65		1.77	1.78

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Labels needed

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25809	4 labels.
25808	4 labels
25807	4 labels
25796	4 labels
25918	5 labels
25932	4 labels

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173 22030-22199 labeled done
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PLANTS OF ECUADOR, S. A.
Loja Region

30 copies

Locality terrace 3-4 km. w. of LOJA,
Prov. de Loja
Lat. 4° S., Long. 79°14'W.
Habitat steep brushy slope above road
in open cultivated country
Date Feb. 10, 1945 Alt. 2400-2450 m.
(aneroid reading)
Coll. F. R. Fosberg No.
& M. A. Giler Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage

60 copies

Locality Hacienda Frutillas, canyon of
RÍO PAUTE near confluence of Río Jubal,
Prov. de Cañar (or Santiago Zamora)
Lat. 2°33' S., Long. 78°28' W.
Habitat disturbed wet forest on steep slope,
openings filled with a giant species of Chusquea
Date Feb. 4, 1945 Alt. 2430-2500 m.
(aneroid reading)
Coll. F. R. Fosberg No.
& F. Prieto Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Zaruma Basin

30 copies

Locality
Curtincapa, km. e. of
PORTOVELO (near Zaruma), Prov. El Oro
Lat. S., Long. W.
Habitat
Date Feb. 1945 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
& M. A. Giler Det.
Remarks
Cinchona Survey of Eucador

PLANTS OF ECUADOR, S. A.
Zaruma Basin

Locality 80 copies
Hacienda Chepel, headwaters of Río Luis,
22 km. e. of ZARUMA, Prov. El Oro
Lat. 3°39' S., Long. 79°25' W.
Habitat
Date Feb. 12-13, 1945 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
& M. A. Giler Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Loja Region

Locality Cerro Villanaco, 100 copies
6 km. w. of LOJA, Prov. de Loja
Lat. 4° S., Long. 79°15' W.
Habitat steep brushy slopes with open
places and patches of low woods
Date Feb. 14, 1945 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
& M. A. Giler Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Nudo de Tinajillas

Locality Paso de Tinajillas, 35 km. s., 30 copies
of CUENCA, Prov. del Azuay
Lat. 3°11' S., Long. 79°2' W.
Habitat open sparsely brushy mountain-top
Date Feb. 8, 1945 Alt. 3160 m.
(aneroid reading)
Coll. F. R. Fosberg No.
& M. A. Giler Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Jubones Drainage 40 copies
Locality Hacienda Zuzudel, 2 km. s. of Santa Rosa, s. end of Cordillera Alpachaca, 43 km. s. of CUENCA, Prov. del Azuay
Lat. 3°16' S., Long. 79°3' W.
Habitat cut-over slopes, covered with low brush
Date Feb. 8, 1945 Alt. 3000 m. (aneroid reading)
Coll. F. R. Fosberg & M. A. Giler No. Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Zaruma Basin 60 copies
Locality Monos, 14 km. w.n.w. of ZARUMA, Prov. El Oro
Lat. 3°40' S., Long. 79°43' W.
Habitat wet forest on steep slope
Date Feb. 11, 1945 Alt. 1230-1280 m. (aneroid reading)
Coll. F. R. Fosberg & M. A. Giler No. Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage 90 copies
Locality east side of valley of Río Monay, 40 km. e.n.e. of AZOGUES, Prov. de Cañar
Lat. 2°33' S., Long. 78°31' W.
Habitat thick wet forest on steep slope
Date Feb. 3, 1945 Alt. m. (aneroid reading)
Coll. F. R. Fosberg & F. Prieto No. Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage — 50 copies

Locality west side of valley of
Río Monay, 39 km. e.n.e. of AZOGUES,
Prov. de Cañar
Lat. 2°34' S., Long. 78°31' W.
Habitat cleared steep slope with patches
of wet woods near top
Date Feb. 3, 1945 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
& F. Prieto Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage — 40 copies

Locality headwaters of Río Shirincay,
west slope of Cerro Huairacaja,
10 km. n.e. of AZOGUES, Prov. de Cañar
Lat. 2°40' S., Long. 78°46' W.
Habitat brushy partially cleared slopes
Date Feb. 1945 Alt. 3200-3300 m.
(aneroid reading)
Coll. F. R. Fosberg No.
& F. Prieto Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage — 30 copies

Locality ridge between upper Río Shirincay
and upper Río Sarcay, n.e. of San Marcos,
8 km. e.n.e. of AZOGUES, Prov. de Cañar
Lat. 2°42' S., Long. 78°46' W.
Habitat cleared slopes, partly regrown to brush
Date Feb. 5, 1945 Alt. 3000 m.
(aneroid reading)
Coll. F. R. Fosberg No.
& F. Prieto Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage

30 copies

Locality Santo Tomas, steep wall of valley of Río Ma/sar, opposite Shoray, 36 km. e.n.e. of AZOGUES, Prov. de Cañar
Lat. 2°34' S., Long. 78°33' W.
Habitat cleared land with brushy patches, fence-rows and trail-sides
Date Feb. 5, 1945 Alt. m. (aneroid reading)
Coll. F. R. Fosberg No.
& F. Prieto Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage

40 copies

Locality along Río Azogues, km. below AZOGUES, Prov. de Cañar
Lat. S., Long. W.
Habitat roadside, flats and bluffs along river
Date Jan. 29, 1945 Alt. 2460 m. (aneroid reading)
Coll. F. R. Fosberg No.
& M. A. Giler Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage

75 copies

Locality west side of Cerro Yanguang (ridge east of Río Dudas) across from Pindilic, 33 km. e.n.e. of AZOGUES, Prov. de Cañar
Lat. 2°35' S., Long. 78°34' W.
Habitat low wet forest with much Chusquea sp. in openings and on upper slopes much Neurolepis sp.
Date Feb. 2, 1945 Alt. 3000-3200 m. (aneroid reading)
Coll. F. R. Fosberg No.
& F. Prieto Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage — 50 copies

Locality Ventanillas (valley), above Shoray on east slope of Cerro Yanguang, Río Masar, 34 km. e.s.e. of AZOGUES, Prov. de Cañar
Lat. 2°36' S., Long. 78°34' W.
Habitat steep wet wooded slope, somewhat disturbed
Date Feb. 1945 Alt. m. (aneroid reading)
Coll. F. R. Fosberg & F. Prieto No.
Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage — 30 copies

Locality top of pass over Cerro Yanguang, east of Río Dudas, directly opposits Pindilic, 33 km. e.n.e. of AZOGUES, Prov. de Cañar
Lat. 2°35' S., Long. 78°34' W.
Habitat brushy windswept crest and slopes
Date Feb. 5, 1945 Alt. 3260 m. (aneroid reading)
Coll. F. R. Fosberg & F. Prieto No.
Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage — 30 copies

Locality valley of Río Mangán across from Taday, 29 km. e.n.e. of AZOGUES, Prov. de Cañar
Lat. 2°37' S., Long. 78°37' W.
Habitat trailside in cleared cultivated land
Date Feb. 5, 1945 Alt. 2700 m. (aneroid reading)
Coll. F. R. Fosberg & F. Prieto No.
Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Paute Drainage 60 copies
Locality headwaters of Río Mangán,
20-22 km. e.n.e. of AZOGUES,
Prov. de Cañar
Lat. 2°38' S., Long. 78°40' W.
Habitat brushy and open flats and slopes
Date Feb. 5, 1935 Alt. 3300 m.
(aneroid reading)
Coll. F. R. Fosberg No.
& F. Prieto Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Cordillera Occidental 50 copies
Locality valley of Río Playas,
3-5 km. above BALZAPAMBA,
Prov. de Bolivar
Lat. 1°46' S., Long. 79°10' W.
Habitat plantations of coffee, bananas, etc.,
with scattered Cinchona trees, wet enough to
support a considerable growth of epiphytes
Date Jan. 11, 1945 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
& Wm. E. Martin Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Cordillera Occidental 30 copies
Locality canyon of Río Playas above
BALZAPAMBA, 10 km. s.w. of San Miguel,
Prov. de Bolivar
Lat. 1°46' S., Long. 79°8' W.
Habitat along road on steep wall of canyon
Date Jan. 11, 1945 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Cordillera Occidental

100 copies

Locality

Prov. de Bolivar

Lat. S., Long. W.

Habitat

Date Alt.
(aneroid reading)

Coll. F. R. Fosberg No.
Det.

Remarks

Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Cordillera Occidental

30 copies

Locality high country at headwaters of Río Gradas, 15 km. s. of CHIMBORAZO VOLCANO, Prov. de Bolivar

Lat. 1°35' S., Long. 78°51' W.

Habitat grassland above timber-line, with bunch grasses and Azorella hummocks

Date Jan. 10, 1945 Alt. m.
(aneroid reading)

Coll. F. R. Fosberg No.
Det.

Remarks

Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Cordillera Occidental

30 copies

Locality canyon of Río Gradas, 20 km. s.s.w. of CHIMBORAZO VOLCANO,
Prov. de Bolivar

Lat. 1°38' S., Long. 78°54' W.

Habitat deep canyon with scattered brushy woods up to 3250 m., denser at lower altitudes, Podocarpus a conspicuous element

Date jan. 10, 1945 Alt. 2900 m.
(aneroid reading)

Coll. F. R. Fosberg No.
Det.

Remarks

Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Cordillera Occidental
Locality headwaters of Río Playas,
km. of SAN MIGUEL,
Prov. de Bolivar
Lat. 1°47' S., Long. 79°5' W.
Habitat cutover cloud-forest, only
scattered patches remaining
Date Jan. 10, 1945 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
& Wm. E. Martin Det.
Remarks
Cinchona Survey of Ecuador

40 copies

PLANTS OF ECUADOR, S. A.
Cordillera Occidental
Locality canyon of Río Saloya, above
Chiriboga, 20 km. w.s.w. of QUITO,
on road to Santo Domingo,
Prov. de Pichincha
Lat. 19' S., Long. 78°38' W.
Habitat steep wet canyon wall
Date Jan. 15, 1945 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
Det.
Remarks
Cinchona Survey of Ecuador

50 copies

PLANTS OF ECUADOR, S. A.
Cordillera Occidental
Locality valley of Río Saloya below
Chiriboga, 35 km. s. of w. of QUITO,
Prov. de Pichincha
Lat. 17' S., Long 78°43' W.
Habitat wet river benches, cleared land
Date Jan. 15, 1945 Alt. 1800 m.
(aneroid reading)
Coll. F. R. Fosberg No.
Det.
Remarks
Cinchona Survey of Ecuador

40 copies

PLANTS OF ECUADOR, S. A.

Locality copies

Prov. de Tungurahua

Lat. S., Long. W.

Habitat

Date Alt. m.

(aneroid reading)

Coll. F. R. Fosberg No.

Det.

Remarks

Cinchona Survey of Ecuador

PLANTS OF COLOMBIA, S. A.

Cordillera Oriental 50 copies

Locality Finca Antillas, e side of Río Blanco, 20 km. s.e. by s. of COLOMBIA, Dept. del Huila

Lat. 3°14' N., Long. 74°43' W.

Habitat moist forest on slope, partially cleared

Date Dec. 25, 1942 Alt. 1800 m. (estimated)

Coll. F. R. Fosberg No.

Det.

Remarks

Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.

Cordillera Oriental 70, copies

Locality Caño Tigre, between Caño Aguas Claras and Caño Grande, 4.5 km. s.w. of VILLAVICENCIO, Int. del Meta

Lat. 4°7' N., Long. 73°39' W.

Habitat moderate rain forest (the foothill forest of M. Bates), somewhat cutover but not cleared, on slopes

Date Feb. 24, 1943 Alt. 500-550 m. (from map)

Coll. F. R. Fosberg No.

Det.

Remarks

Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Eastern Lowlands

70 copies

Locality along Río Ocoa, 9 km. s.e.
of VILLAVICENCIO, Int. del Meta
Lat. 4°6' N., Long. 73°38' W.
Habitat rainforest (the piedmont forest of M. Bates), somewhat disturbed, slender trees with much undergrowth
Date Feb. 24, 1943 Alt. 400 m.
(from map)
Coll. F. R. Forberg No.
Det.

Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental

50 copies

Locality Quebrada los Indios, Chucarima, Valley of RÍO VALEGRÁ, 33 km. s.e. by s. of Pamplona, Dept. Norte de Santander
Lat. 7°10' N., Long. 72°28' W.
Habitat Wet forest with clearings
Date Nov. 1942 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
Det.

Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental

60 copies

Locality slopes east of RÍO VALEGRÁ, near Quebrada Valegrá , 32 km. s.e. of Pamplona, Dept. Norte de Santander
Lat. 7°11' N., Long. 72°26' W.
Habitat wet forest on gently sloping ground
Date Nov. 16, 1942 Alt. 2000 m.
(aneroid reading)
Coll. F. R. Fosberg No.
Det.

Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental — 30 copies

Locality Fuente del Margua, just above BATA, on Río Margua, 30 km. s.e. by e. of Pamplona, Dept. Norte de Santander
Lat. 7°13-14' N., Long. 72°26' W.
Habitat river bank and ravines above river
Date Nov. 1942 Alt. 1200-1250 m. (aneroid reading)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental — 80 copies

Locality Monserrate, mountain above BOGOTÁ, Dept. de Cundinamarca
Lat. 4°36' N., Long. 74°2' W.
Habitat wet brushy subpáramo vegetation, largely Ericaceae and Melastomaceae, on mountaintop, somewhat grazed
Date Nov. 8, 1942 Alt. 3210 m. (from map)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental — 40 copies

Locality Mts. around headwaters of Quebrada San Francisco, back of BOGOTÁ, Dept. de Cundinamarca
Lat. 4°36' N., Long. 74°2' W.
Habitat páramo slopes and ridges
Date July 30, 1944 Alt. 3400-3500 m. (aneroid reading)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental — 120 copies

Locality Chucarima, ridge w. of mouth of
Río Colorado, drainage of RÍO VALEGRA , 35 km.
s.e. by e. of Pamplona, Dept. Norte de Santander
Lat. 7°10' N., Long. 72°17' W.
Habitat cleared slope grown up to brush, Pteridium and grass
Date Nov. 14, 1942 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

PLANTS OF ECUADOR, S. A.
Río Catamayo Drainage — 40 copies

Locality Paso de Cajanuma, 9 km. s. of
LOJA, Prov. de Loja
Lat. 4°6' S., Long. 79°12' W.
Habitat brushy ridge
Date Feb. 9, 1945 Alt. 2460 m.
(aneroid reading)
Coll. F. R. Fosberg No.
Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF ECUADOR, S. A.
Río Catamayo Drainage — 80 copies

Locality South slopes of Paso de Cajanuma,
above Pubeblo Nuevo, opposite Cerro Urituzinga,
11 km. s. of LOJA, Prov. de Loja
Lat. 4°8' S., Long. 79°11' W.
Habitat cleared slopes with brushy ravines
Date Feb. 9, 1945 Alt. 2300-2350 m.
(aneroid reading)
Coll. F. R. Fosberg No.
& M. A. Giler Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF EUCADOR, S. A.
Río Catomayo Drainage 40 copies
Locality Valley of Río Malacatos, 2 km. e. of
Malacatos (Valledolid), 24 km. s. of LOJA,
Prov. de Loja
Lat. 4°14' S., Long. 79°13' W.
Habitat dry slopes covered with tall brush
of Acacia, Annona, etc.
Date Feb. 9, 1945 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
& M. A. Giler Det.
Remarks
Cinchona Survey of Ecuador

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental 40 copies
Locality Quebrada Quemada,
CORDILLERA DE HOYA GRANDE,
35 km. e. of s. of Pamplona,
Dept. Norte de Santander
Lat. 7°5' N., Long. 72°33-35' W.
Habitat high brushy, rocky páramo ridge
Date Nov. 19, 1942 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental 100 copies
Locality Quebrada Samaria, 7-12 km.
s.e. to s.e. by e. of CHITAGÁ,
drainage of Río Chitagá,
Dept. Norte de Santander
Lat. 7°6' N., Long. 72°35-37' W.
Habitat páramo slopes, white sand, oozing
water here and there, brushy hillsides,
rocky ridges and ledges
Date Nov. 19, 1942 Alt. m.
(aneroid reading)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

PLANTS OF GUATEMALA, C. A.

Locality Barrancas just north of GUATEMALA CITY
Lat. 14°34' N., Long. 90°30' W.
Habitat fine friable soil, steep canyon walls and flat tops of erosion remnants between them forming grassy meadows surrounded by oak trees on edges of cliffs
Date Oct. 30, 1942 Alt. 1400-1490 m. (from map)
Coll. F. R. Fosberg No.
Det.
Remarks
Cinchona Mission

60 copies

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental

Locality
Drainage of Río VALEGRÁ, Dept. Norte de Santander
Lat. N., Long. W.
Habitat
Date Alt. (aneroid reading)
Coll. No.
Det.
Remarks
Colombian Cinchona Mission

50 copies del

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental

Locality western end of Alto de Preciosas, Carvajal, RIO VALEGRÁ, 40 km. s.s.e. of Pamplona, above Quebrada de la Paja, Dept. Norte de Santander
Lat. 7°4' N., Long. 72°29' W.
Habitat moist, somewaht decadent forest on very steep rocky slope, openings filled with Chusquea sp.
Date Nov. 18, 1942 Alt. 2400-2500 m. (aneroid reading)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

40 copies del

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental

40 copies

Locality Bosque de Aguadas, Quebrada Quemada, Cornejo, valley of RÍO VALEGRÁ, 35 km. s.s.e. of Pamplona, Dept. Norte de Santander
Lat. 7°5' N., Long. 72°32' W.
Habitat moist woods
Date Nov. 19, 1942 Alt. 2600 m. (aneroid reading)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental

200 copies

Locality eastern slope of Páramo de Cruza Verde, above Chipaque, 15 km. s. of BOGOTÁ, Dept. de Cundinamarca
Lat. 4°28' N., Long. 74°3-4' W.
Habitat transition between páramo and Subpáramo on sloping bench
Date Feb. 28, 1943 Alt. 3000 m. (from map)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental

50 copies

Locality slope above Chipaque, below Páramo de Cruz Verde, 15 km. s. of BOGOTÁ, Dept. de Cundinamarca
Lat. 4°28' N., Long. 74°3' W.
Habitat remnants of subpáramo brush between cleared patches on slopes
Date Feb. 28, 1943 Alt. 2900 m. (from map)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Cordillera Oriental

30 copies

Locality Fontibón,
on Sabana n.w. of BOGOTÁ ,
Dept. de Cundinamarca
Lat. 4°41-42' N., Long. 74°9-10' W.
Habitat roadsides and near dwellings
Date July 6, 1943 Alt. 2576 m.
(from map)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Eastern Lowlands

80 copies

Locality 3 km. e. of Apiay Airport,
n. of Caño Suria (Zuria), on road
to Puerto Lopez, 14 km. e.s.e. of
VILLAVICENCIO, Int. del Meta
Lat. 4°4' N., Long 73°32' W.
Habitat moist forest surrounding swale,
this mostly dry at this season but
obviously a pond most of the year, in
savanna type grassland, black soil
Date Feb. 25, 1943 Alt. 350 m.
(from map)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission

PLANTS OF COLOMBIA, S. A.
Eastern Lowlands

20 copies

Locality 7 km. e. of Apiay Airport,
n. of Caño Suria (Zuria), on road to
Puerto Lopez, 18 km. e.s.e. of
VILLAVICENCIO, Int. del Meta
Lat. 4°4' N., Long. 73°30' W.
Habitat savanna grassland with
scattered trees and patches of woods
Date Feb. 25, 1943 Alt. 340 m.
(from map)
Coll. F. R. Fosberg No.
Det.
Remarks
Colombian Cinchona Mission